

CLAIMS:

1. A quadrature device (1) comprising I and Q signal paths and corresponding signal paths components (2I, 2Q; 4I, 4Q; 9I, 9Q) showing a mismatch, characterized in that the quadrature device (1) comprises switching means (3, 3', 6, 3'') for exchanging the I and Q signals in said paths.

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2. The quadrature device (1) according to claim 1, characterized in that the signal paths components (2I, 2Q; 4I, 4Q; 9I, 9Q) comprise amplifiers, attenuators, filters, mixers (4I, 4Q) converters, such as digital to analog (D/A) converters (9I, 9Q) or an analog to digital (A/D) converters (8I, 8Q) and the like.

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3. The quadrature device (1) according to claim 1 or 2, characterized in that the quadrature device (1) is a sigma-delta A/D converter having I and Q feedback paths and D/A converters (9I, 9Q) in the feedback paths for exchanging I and Q feedback signals.

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4. The quadrature device (1) according to one of the claims 1-3, characterized in that the switching means (3, 3', 6, 3'') are equipped for performing an I and Q data dependent exchange of the I and Q signals.

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5. The quadrature device (1) according to claim 4 referring to claim 3, characterized in that the data dependent exchange takes place on an exclusive OR basis.

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6. A communication device, receiver, transmitter, transceiver, telephone, mixer, modulator or demodulator, comprising a quadrature device (1) according to one of the claims 1-5.

7. A method for reducing the effects of a mismatch between I and Q signal paths in a quadrature device (1), characterized in that the effects of said mismatch are reduced by exchanging of I and Q signals in said paths.

8. The method according to claim 7, characterized in that the exchanging takes place with a switching frequency which exceeds the bandwidth of the I and Q signals.

9. The method according to one of the claims 7-8, characterized in that the
5 quadrature device (1) is a sigma delta modulator producing I and Q output bitstreams, and that I and Q feedback signals from said output bitstreams are being exchanged.

10. The method according to one of the claims 7-9, characterized in that the exchanging has a rate which is a multiple of the sampling frequency of said bitstreams.

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11. The method according to one of the claims 7-10, characterized in that the exchanging of the I and Q signals takes place in dependence on their I and Q data content.

12. The method according to one of the claims 7-11, characterized in that the
15 exchanging of the I and Q paths takes place on an exclusive OR basis, whereby alternately the I and Q signals are fed back as they are or are fed back interchanged in exclusive OR dependence on the I and Q data content.